Could navigational buoys help with Met Office forecasts?

Description

For the first time the Met Office has set up a trial to see if it is possible to use navigational buoys to gather weather data from near coastal areas.

The Met Office has just 10 weather observation buoys around the UK coast, meaning this area, which is vital when it comes to the understanding of weather systems transitioning from the open ocean to the land, is particularly data sparse.

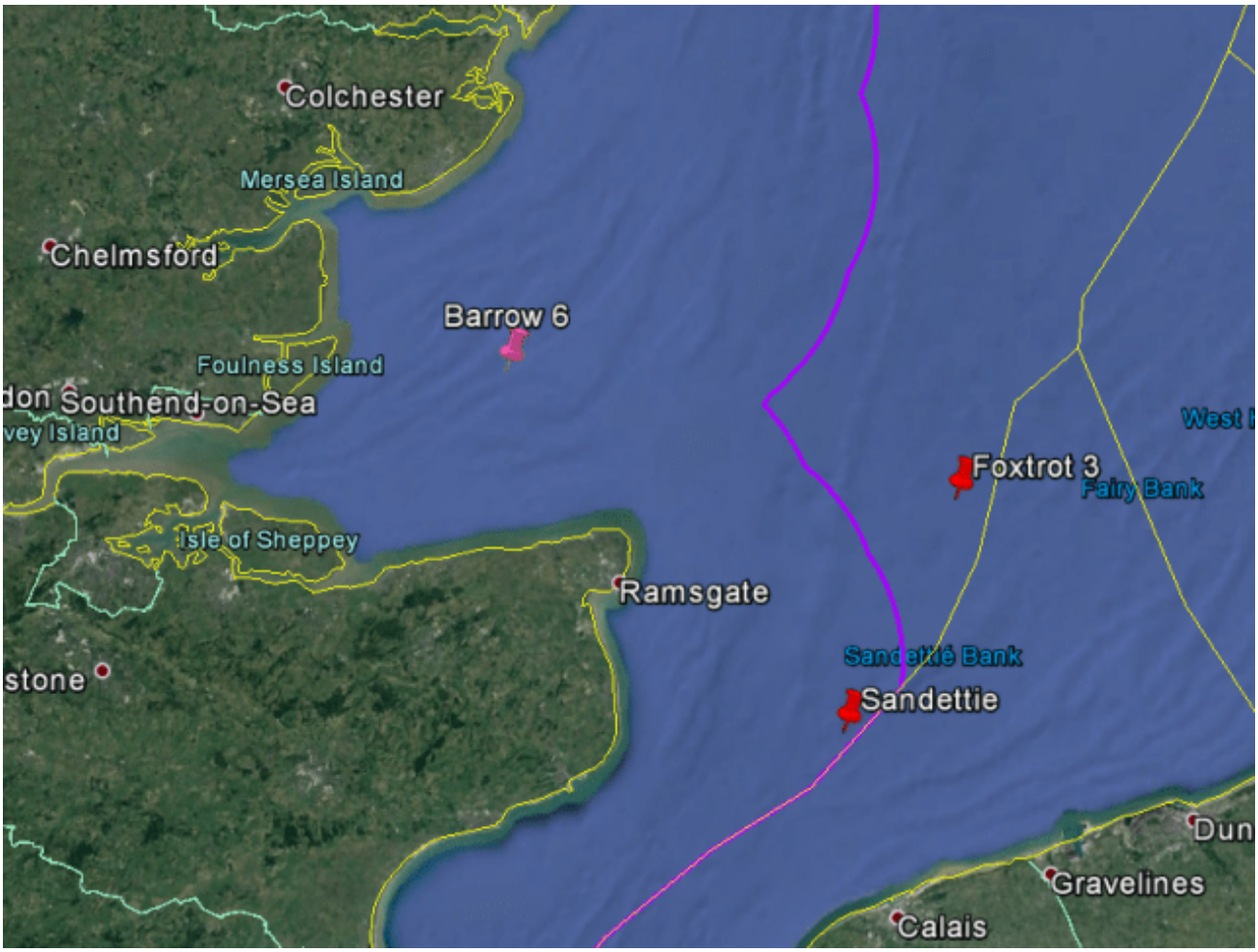
Trinity House buoys around the coast of England and Wales

Trinity House, the lighthouse authority for England, Wales, the Channel Islands and Gibraltar, joined forces with the Met Office to help look at ways to get the latest weather information to ships of 300 tonnes or more.

Met Office weather stations are already placed on Trinity House's Lightvessels* in the English Channel. Anyone who's heard the shipping forecast may well have heard Lightvessels mentioned as their readings are regularly used. Trinity House also has over 400 navigation buoys around the coast.

Barrow 6 Buoy

The joint project looked at placing weather observation equipment on one of the existing navigation buoys and transmitting that data to the Met Office as another source of coastal observations.



Location of Barrow 6 in relation to our closest stations

A buoy in the Thames Estuary, Barrow 6, and another in the Bristol Channel, have now been equipped with wind, temperature, humidity, barometric pressure and sea surface temperature sensors.

AWS system being put onto Barrow 6

This is a similar set of sensors to the other buoys in the Met Office network, although it uses a different set up, so the systems can easily be installed on a third party buoy. In the future the data from the buoy will hopefully not only be sent to the Met Office but also to ships via Automatic Identification System (AIS**).

This new project opens up the possibility of increasing observations from this data sparse marine location.

**Lightvessel – ships that act as light houses out at sea.*

***AIS is a VHF network of transceivers on ships of 300 tonnes or more which aids navigation. It is primarily an anti collision system but has dedicated message formats for other data, including meteorological data.*

Date Created
June 2017

Measuring the hot spell of June 2017

Description

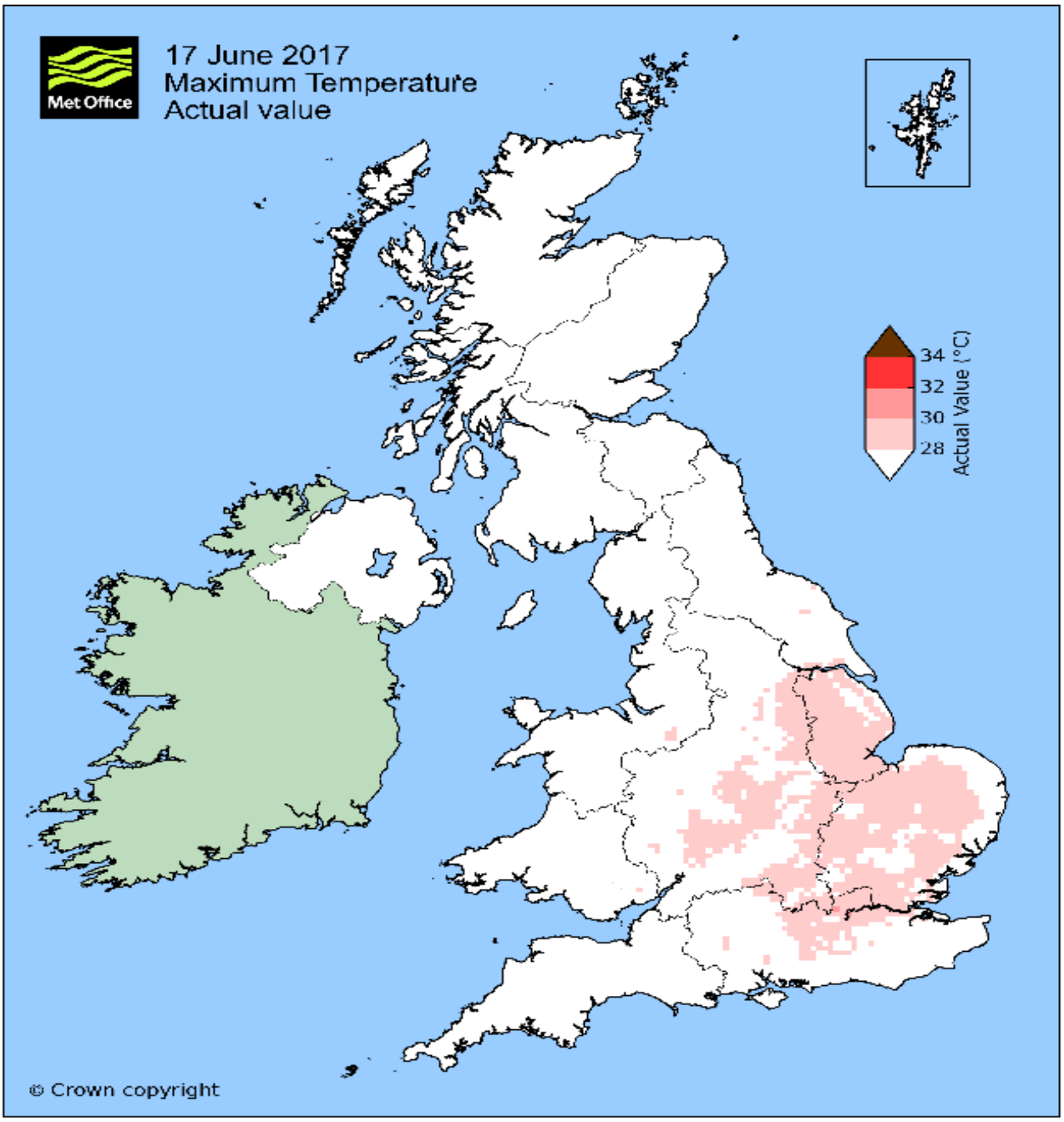
The last week has seen high temperatures across large parts of England and Wales in what has been the longest continuous hot spell in June since the hot, dry summer of 1976. Temperatures of 30°C or more were recorded somewhere across England and Wales for the last five days, peaking on Wednesday 21 June at 34.5°C at Heathrow, London which was the hottest day of the year so far. However, for Scotland and Northern Ireland it was hotter on 26 May (Lossiemouth, Moray, 29.4°C and Castlederg, Tyrone, 26.2°C)

Below is a rundown of the top temperatures recorded in each of the home nations through this hot spell:

Location	Date	Temperature / °C
ENGLAND		
Heathrow, London	21 June	34.5
WALES		
Cardiff, South Glamorgan	21 June	31.0
SCOTLAND		
Floors Castle, Roxburghshire	18 June	26.5
NORTHERN IRELAND		
Helen’s Bay	18 June	25.6

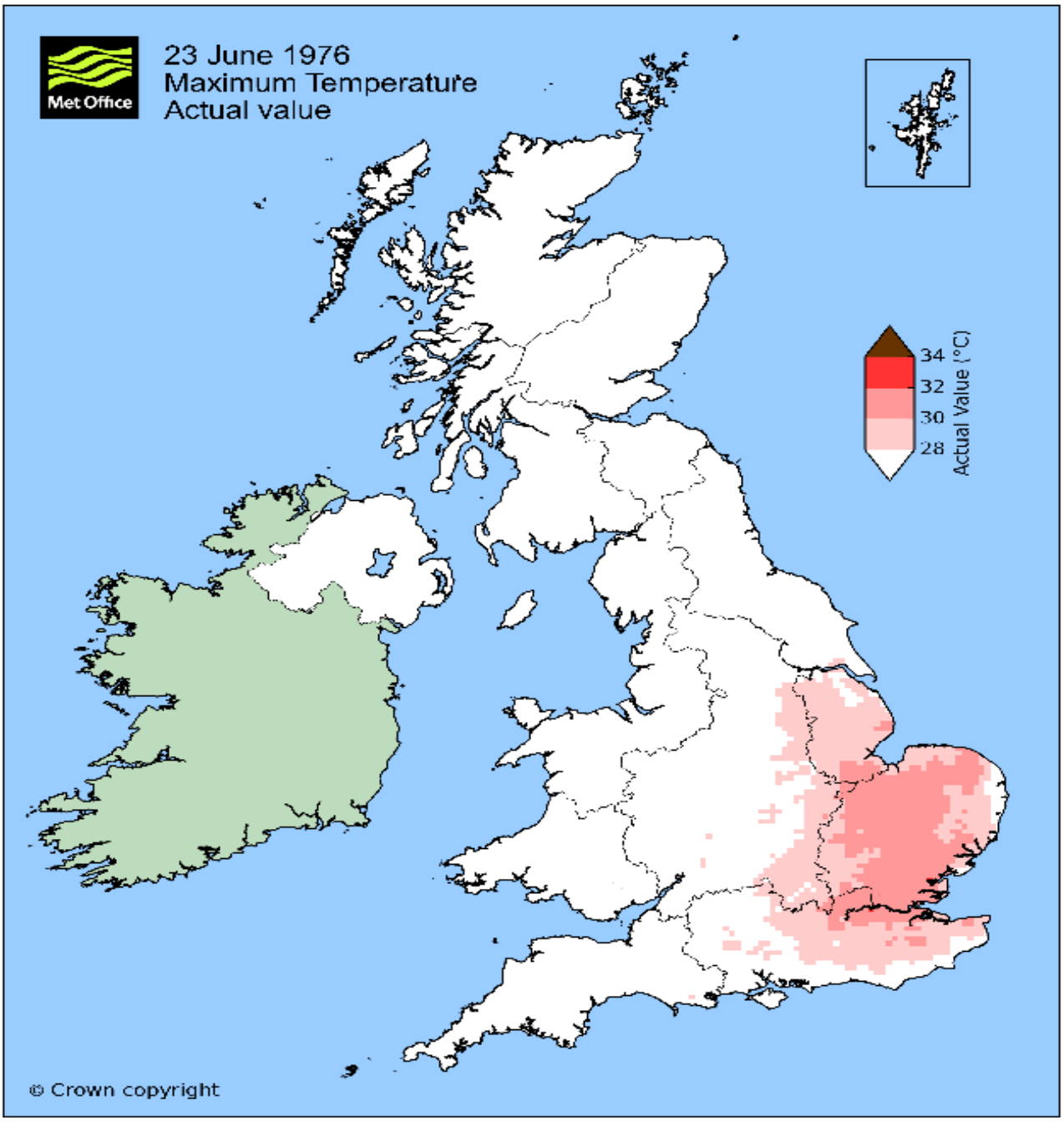
Although notable, this hot spell didn’t break any national temperature records, it was for many of the long running weather stations the hottest June day since the 1976 heatwave. One exception was that on Monday 19 June, Newport in Shropshire recorded a temperature of 30.8°C which narrowly beat the previous record of 30.7°C from 29 June 1976 in an 85 year record.

The images below show how the pattern of heat altered over the course of this period. With high pressure dominating, bringing a warm south or southwesterly flow of air, heat was concentrated across southern parts of the UK, but temperatures in the north of England and Wales were in the high 20°C’s over last weekend and the early part of this week.



Maximum temperatures June 2017

Many sites recorded their highest June maximum temperatures since 1976 this week. However the hot spell in June 1976 remains the UK's most significant for the month when temperatures exceeded 32°C widely across England and the current UK maximum temperature record for June was set at Mayflower Park, Southampton on 28 June when 35.6°C was recorded. The maps below show the extent and longevity of the heat over that period.

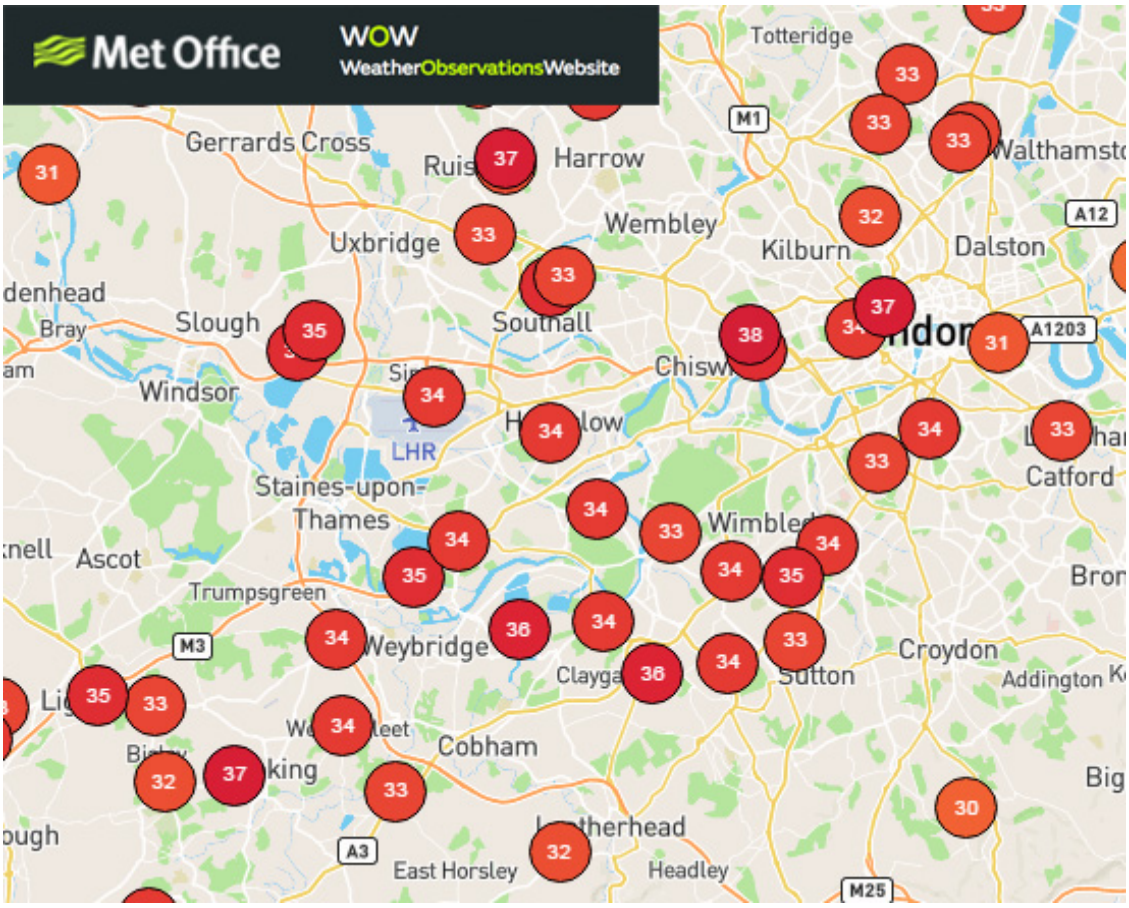


Maximum temperatures June 1976

The Met Office are responsible for maintaining the network of observing sites across the UK and their readings play an important first step in helping meteorologists to forecast the weather. Our weather station sites are selected to ensure that the observations are representative of the wider area around the station and not disproportionately affected by local effects. This means that weather stations in urban areas, although carefully sited to be representative of that area, will always be warmer than surrounding rural locations, but still reflect the conditions being experienced by people living and working there.

The map below shows the temperature measurements which were recorded by people contributing to

our Weather Observations Website (WOW) alongside the Met Office official observations on the afternoon of the 21 June.



WOW observations 21 June 2017 http://wow.metoffice.gov.uk/

The Met Office sites recorded maximum temperatures from 32.9 °C at London, St James' Park to 33.8 °C at Kew Gardens and 34.5 °C at London Heathrow a range of 1.6 °C. The WOW readings clearly show a much larger range and the importance of having a well-sited thermometer which isn't in full sun or in a very sheltered location to provide observations that are representative of the wider area. However, the WOW data are very useful to add context and show that some people may experience temperatures higher or lower than the official observations around their home or workplace.

If you'd like to find out more about contributing to WOW you can sign up or enter an observation here.

More information about this hot spell of weather is availble on our UK climate pages.

Date Created
June 2017